

Claims

- [c1] A method for generating kerf data, comprising the steps of:
 - submitting chip data for chip processing;
 - generating kerf data corresponding to the chip data;
 - and
 - manipulating the kerf data by use of kerf processing using a same manipulation process as for the chip data.
- [c2] The method of claim 1, wherein the generating step provides for a just-in-time kerf build substantially immediately prior to mask manufacturing.
- [c3] The method of claim 2, wherein the generating step provides for a just-in-time kerf build so that multiple versions of kerf design images are avoided.
- [c4] The method of claim 1, further comprising providing a graphical user interface (GUI) to receive at least one of information and parameters prior to the submitting and generating steps and which is made available to the submitting and generating steps.

- [c5] The method of claim 1, further comprising sharing a same mask order information between the submitting and generating steps.
- [c6] The method of claim 5, wherein the sharing mask order information step includes accessing the mask order information from at least one of a file and a database.
- [c7] The method of claim 1, further comprising the step of manipulating the kerf data and the chip data with substantially a same version of design manipulation software.
- [c8] The method of claim 1, further comprising load balancing at least one of the chip design processing and the kerf processing.
- [c9] The method of claim 1, wherein the manipulating step includes producing kerf test structures for wafer testing.
- [c10] The method of claim 1, wherein in the event an error occurs during at least one of the generating and manipulating step, an email is sent to a destination indicating a nature of the error, such that correction of the error can be made while the chip processing is occurring in order to reduce mean time to repair and to reduce cycle time for the kerf processing.

- [c11] The method of claim 10, further including sending the email if validation checks detect an error in the kerf data, in order to reduce mean time to repair the error.
- [c12] The method of claim 1, wherein at least one of the generating step and the manipulating step occurs concurrently with the chip processing.
- [c13] The method of claim 1, wherein the submitting step produces a chip design image and the manipulating step produces a kerf design image such that the produced chip design image and the kerf design image remain consistent.
- [c14] The method of claim 1, further comprising the steps of:
 - archiving the manipulated kerf data; and
 - updating processing logs to record information about at least one of the chip and kerf processing for providing an audit process for debugging issues.
- [c15] A method for generating kerf data, the method comprising the steps of:
 - executing design manipulation utilities for at least chip data design manipulation;
 - creating a kerf design build utilities file by assembling kerf features previously designed and stored in a library of kerf design data as a result of kerf data

manipulation; and
creating and manipulating kerf design data concurrently with chip data design manipulation processing by using same parameters in the kerf design data manipulation and chip data design manipulation thereby ensuring that the kerf design data and the chip design data are consistent.

- [c16] The method of claim 15, wherein in the creating and manipulating step the design data includes one of shrinks, expands and derivation of new data levels.
- [c17] The method of claim 15, wherein in the creating and manipulating step includes processing assist features for device enhancements and addition of nonfunctional shapes for increased manufacturing line process latitude.
- [c18] The method of claim 15, wherein after successful completion of the chip data design manipulation processing, at least one of a chip design image and modified design data is archived in a chip design data repository.
- [c19] The method of claim 15, wherein the creating kerf design data uses information associated with at least one of the chip data and a mask order for the chip, and the information is obtained from a previously created file thereby minimizing user inputs and reducing errors.

- [c20] The method of claim 15, following successful completion of the creating and manipulation step, submitting the kerf design data to validation checks to ensure that the combination of a kerf design grid and a chip design grid prevents grid snapping at the mask write tool.
- [c21] A system for generating kerf data, comprising:
 - a component to submit chip data for chip processing;
 - a component to generate kerf data corresponding to the chip data; and
 - a component to manipulate the kerf data via kerf processing using the same manipulation process as the chip data.
- [c22] The system of claim 21, wherein the component to generate kerf data provides a just-in-time kerf build substantially immediately prior to mask manufacturing and provides a just-in-time kerf build so that multiple versions of kerf design images are avoided.
- [c23] The system of claim 21, further comprising a component to provide a graphical user interface (GUI) to receive at least one of information and parameters which is made available to the component to submit chip data for chip processing and the component to generate kerf data corresponding to the chip data.

- [c24] The system of claim 21, further comprising a means for sharing the same mask order information between all components.
- [c25] The system of claim 21, wherein the chip processing and kerf processing are concurrent, and wherein the chip processing produces a chip design image and the kerf processing produces a kerf design image, the produced chip design image and the kerf design image being consistent.
- [c26] The system of claim 21, further comprising a component to produce kerf test structures for improved reliability of wafer testing.
- [c27] A computer program product comprising a computer usable medium having readable program code embodied in the medium, the computer program product includes:
 - a first computer program code to submit chip data for chip processing;
 - a second computer program code to generate kerf data corresponding to the chip data; and
 - a third computer program code to manipulate the kerf data via kerf processing using the same manipulation process as the chip data.